



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

SUMMARY FINAL BIOLOGICAL OPINION ON THE EFFECTS TO THE MEXICAN SPOTTED OWL FROM ISSUANCE OF THE FOREST ROAD 391E SPECIAL USE PERMIT

Cons. #2-22-01-F-429

Date of the final opinion: July 9, 2001

Action agency: U.S. Forest Service, Region 3.

Project: The Pecos/Las Vegas Ranger District of the Santa Fe National Forest requested formal consultation with the Service on the issuance of a Road Use Permit to Evergreen Resource Management to maintain Forest Road 391E in order to haul forest products off of private land owned by Cecelia Pepper. The Biological Assessment and Evaluation documents potential impacts of granting a special use permit to haul logs across Forest Service system roads and the effects of timber harvest in mixed conifer habitat on private land.

Listed species affected: Mexican spotted owl (*Strix occidentalis lucida*)

Biological opinion: Non-jeopardy

Incidental take statement: Mexican spotted owls are not expected to be taken as a result of this project.

Conservation Recommendations: Implementation of conservation recommendations is discretionary. Two conservation recommendations are provided.

June 12, 2001

Cons. #2-22-01-F-429

Daniel A. Crittenden, District Ranger
U.S. Forest Service
Pecos/Las Vegas Ranger District
Santa Fe National Forest
P.O. Box 429
Pecos, New Mexico 87552

Dear Mr. Crittenden:

This is in response to your May 23, 2001, request for formal consultation with the U.S. Fish and Wildlife Service (Service) under section 7 of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The request concerns issuance of a road use permit, for Forest Road 391E, to Evergreen Resource Management for the purpose of improving the road to haul forest products harvested from private land (Cecilia Pepper property) within the Pecos/Las Vegas Ranger District of the Santa Fe National Forest. This document represents the Service's biological opinion on the effects of that action on the threatened Mexican spotted owl (*Strix occidentalis lucida*) (owl). The Forest Service determined that the permitting action is interrelated to the harvesting activities and the private land timber harvest may affect the owl.

Consultation History

Informal consultation was initiated on January 19, 2001, when District Biologist Joseph Lujan, the District Recreation and Lands Staff, and Mark and Gary Shaeffer of Evergreen Resources met with Service Biologists Delfinia Montañó and Cindy Schulz in the Forest Service Pecos Office to discuss the proposal and section 7 requirements. On May 23, 2001, the Forest Service submitted a request for formal consultation on the issuance of a Road Use Permit to Evergreen Resource Management to maintain Forest Road 391E in order to haul forest products harvested from private land within the Pecos/Las Vegas Ranger District. The biological assessment and evaluation (BAE) determined that the permitting action is interrelated to the harvesting activities and that the private land timber harvest may affect the owl.

The following biological opinion is based on information provided in the BAE; data presented in the final Recovery Plan for the owl; data in our files; consultation with experts; information provided by the Forest Service; the January 19, 2001, meeting; the Forest Service's May 23, 2001, letter; Forest Service regional owl data; literature review; and other sources of information.

BIOLOGICAL OPINION

It is the Service's biological opinion that the issuance of the Forest Road 391E special use permit addressed in this document is not likely to jeopardize the continued existence of the owl.

DESCRIPTION OF THE PROPOSED ACTION

Evergreen Resource Management has applied for a permit to maintain and use Forest Service Road 391E to haul forest products off private land belonging to Cecilia Pepper to various manufacturing facilities around the area. Harvest activities will occur on approximately 160 acres of private land located in the NW 1/4 of section 17, T 19 N, R 14 E. Vegetation in the area is mixed conifer with an overstory of Douglas fir, ponderosa pine, white fir, spruce and aspen. According to the BA, the proposed harvest operations are to remove all size classes. Crown closure across the property is currently 75 - 85 percent. This will be reduced to approximately 30 - 40 percent by harvest operations. All size classes present in the pre-harvest stand will be represented in the post-harvest stand, although the overall percentage of the larger size classes will be reduced 60 - 70 percent by harvest operations. Species composition of the post-harvest stand will be similar to that of the pre-harvest stand, with a minor increase in the overall percentage of quaking aspen and white pine, since neither of these species would be harvested. Harvest operations will include falling trees by hand and/or feller-buncher, skidding of the logs to the landing areas with a track machine and/or a rubber-tired skidder, the loading of logs onto the trucks by a front-end loader. Production will be approximately 4 to 8 truckloads of sawlogs per day. Conventional road maintenance methods will be used.

The distance of FR 391E to be maintained is 1.4 miles. Harvest and hauling activities were planned to begin in June 2000 and end by January 2001. According to the BA, timber operations will take place when ground conditions are favorable. Duration of timber harvest will be about 8 - 12 weeks. Additional operations (clean-up, firewood cutting of top-wood, and burning of slash piles) will be on-going as conditions permit, for several months following the completion of the harvest operations.

The original BA submitted by Evergreen Resource Management analyzed only the proposed harvesting of timber on private lands. In the Forest Service's May 23, 2001, letter requesting formal consultation, the issue of log hauling on Forest Road 391E was also addressed. This biological opinion concerns the proposed action, which considers and evaluates all the direct and indirect effects of that action, as well as interdependent and interrelated actions.

STATUS OF THE MEXICAN SPOTTED OWL (range-wide)

The Mexican spotted owl was listed as threatened on March 16, 1993 (58 FR 14248). Critical habitat for the owl was designated on June 6, 1995 (60 FR 29914), but was subsequently withdrawn on March 25, 1998 (63 FR 14378). Critical habitat was proposed again on July 21, 2000 (65 FR 45336) and re-designated on February 1, 2001 (66 FR 8530). Background and status information on the owl is found in the Final Rule listing the owl as a federally-threatened species (58 FR 14248), previous biological opinions provided by us to the Forest Service, and the final Recovery Plan. The information on species description, life history, population dynamics, status, distribution, and range-wide trends provided in those documents is included herein by reference and is summarized below.

The American Ornithologist's Union currently recognizes three spotted owl subspecies, including the California spotted owl (*Strix occidentalis occidentalis*); Mexican spotted owl (*S. o. lucida*); and northern spotted owl (*S. o. caurina*). The Mexican spotted owl is distinguished from the California and northern subspecies chiefly by geographic distribution and plumage. The Mexican spotted owl is mottled in appearance with irregular white and

brown spots on its abdomen, back and head. The spots of the Mexican spotted owl are larger and more numerous than in the other two subspecies giving it a lighter appearance. Several thin white bands mark an otherwise brown tail. Unlike most owls, spotted owls have dark eyes.

The *lucida* subspecies is a distinguishable taxon based on allozyme electrophoresis (Barrowclough and Gutiérrez 1990). Analysis of mitochondrial DNA shows further evidence that the three designated subspecies are valid. Despite the demonstrated phylogenetic relatedness, there is evidence of reduced gene flow between the subspecies, indicating the three subspecies should be treated as separate conservation units (Barrowclough *et al.* 1999).

The Mexican spotted owl has the largest geographic range of the three subspecies. The range extends north from Aguascalientes, Mexico, through the mountains of Arizona, New Mexico, and western Texas, to the canyons of southern Utah, and southwestern Colorado, and the Front Range of central Colorado. Because this is a broad area of the southwestern United States and Mexico, much remains unknown about the subspecies' distribution within this range. This is especially true in Mexico where much of the owl's range has not been surveyed. The owl occupies a fragmented distribution throughout its United States range corresponding to the availability of forested mountains and canyons, and in some cases, rocky canyon lands. Although there are no estimates of the owl's historic population size, its historic range and present distribution are thought to be similar.

According to the Recovery Plan, 91 percent of owls known to exist in the United States between 1990 and 1993 occurred on land administered by the Forest Service; therefore the primary administrator of lands supporting owls in the United States is the Forest Service. Most owls have been found within Region 3, which includes 11 National Forests in New Mexico and Arizona. Forest Service Regions 2 and 4, including 2 National Forests in Colorado and 3 in Utah, support fewer owls. The owl's range is divided into 11 Recovery Units (RU), 5 in Mexico and 6 in the United States, as identified in the Recovery Plan (USDI 1995). The Recovery Plan also identifies recovery criteria and provides distribution, abundance, and density estimates by RU. The Upper Gila Mountain Recovery Unit has the greatest known concentration of owl sites (55.9 percent), followed by the Basin and Range-East (16.0 percent), Basin and Range-West, (13.6 percent), Colorado Plateau (8.2 percent), Southern Rocky Mountain-New Mexico (4.5 percent), and Southern Rocky Mountain-Colorado (1.8 percent) RUs.

A reliable estimate of the number of owls throughout its entire range is not currently available due to limited information. Fletcher (1990) calculated that 2,074 owls existed in Arizona and New Mexico in 1990 using information gathered by Region 3 of the Forest Service. Fletcher's calculations were subsequently modified by the Service (USDI 1991), who estimated a total of 2,160 owls throughout the United States. However, these numbers are not considered reliable estimates of current population size for a variety of statistical reasons. While the number of owls throughout the range is currently not available, the Recovery Plan reports an estimate of owl sites based on 1990-1993 data. An owl "site" is defined as a visual sighting of at least one adult owl or a minimum of two auditory detections in the same vicinity in the same year. Surveys from 1990 through 1993 indicate one or more owls have been observed at a minimum of 758 sites in the United States and 19 sites in Mexico. In addition, those surveys indicate that the species persists in most locations

reported prior to 1989, with the exception of riparian habitats in the lowlands of Arizona and New Mexico, and all previously occupied areas in the southern States of Mexico.

In a summary by the Forest Service of all territory and monitoring data for the 1995 field season, a total of 869 management territories (MT) were reported to the Service (U.S. Forest Service, *in litt.* January 22, 1996). Based on that number of owl sites, the number of owls in the United States may range from 869 individuals, assuming each known site was occupied by a single owl, to 1,738 individuals, assuming each known site was occupied by a pair of owls. The 1996 data are the most current compiled information available; however, more recent surveys efforts have likely resulted in additional sites being located in all Recovery Units.

Mexican spotted owls breed sporadically and do not nest every year. This owl's reproductive chronology varies somewhat across its range. In Arizona, courtship apparently begins in March with pairs roosting together during the day and calling to each other at dusk (Ganey 1988). Eggs are laid in late March or typically early April. Incubation begins shortly after the first egg is laid, and is performed entirely by the female (Ganey 1988). The incubation period for the owl is assumed to be 30 days (Ganey 1988). During incubation and the first half of the brooding period, the female leaves the nest only to defecate, regurgitate pellets, or receive prey from the male, who does all or most of the foraging (Forsman *et al.* 1984, Ganey 1988). Eggs usually hatch in early May, with nestling owls fledging four to five weeks later, and then dispersing in mid-September to early October (Ganey 1988).

Little is known about the reproductive output for the owl. It varies both spatially and temporally (White *et al.* 1995), but the subspecies demonstrates an average annual rate of 1.001 young per pair. Current demographic research in Arizona and New Mexico has documented populations that are declining at greater than 10 percent a year (Seamans *et al.* 1999). Possible reasons for the population declines are declines in habitat quality and regional trends in climate (Seamans *et al.* 1999). Based on short-term population and radio-tracking studies, and longer-term monitoring studies, the probability of an adult owl surviving from one year to the next is 0.8 to 0.9. Juvenile survival is considerably lower, at 0.06 to 0.29. These estimates may be low due to the high likelihood of permanent dispersal from the study area, and the lag of several years before marked juveniles reappear as territory holders and are detected as survivors through recapture efforts (White *et al.* 1995). Little research has been conducted on the causes of mortality, but it is believed that predation by great horned owls, northern goshawks, red-tailed hawks, and golden eagles, as well as starvation, and accidents or collisions, may all be contributing factors.

Mexican spotted owls nest, roost, forage, and disperse in a diverse array of biotic communities. Nesting habitat is typically in areas with complex forest structure or rocky canyons, and contain mature or old-growth stands that are uneven-aged, multi-storied, and have high canopy closure (Ganey and Balda 1989a, USDI 1991). In the northern portion of the range (southern Utah and Colorado), most nests are in caves or on cliff ledges in steep-walled canyons. Elsewhere, the majority of nests appear to be in Douglas fir trees (Fletcher and Hollis 1994, Seamans and Gutierrez 1995). A wider variety of tree species are used for roosting; however, Douglas fir is the most commonly used species (Ganey 1988, Fletcher and Hollis 1994, Young *et al.* 1998). Spotted owls generally use a wider variety of forest conditions (mixed conifer, pine-oak, ponderosa pine, piñon-juniper) for foraging than they use for nesting/roosting.

Seasonal movement patterns of Mexican spotted owls are variable. Some individuals are year-round residents within an area, some remain in the same general area but show shifts in habitat use patterns, and some migrate considerable distances 12-31 miles during the winter, generally migrating to more open habitat at lower elevations (Ganey and Balda 1989b, Willey 1993, Ganey *et al.* 1998). Home-range size of Mexican spotted owls appears to vary considerably among habitats and/or geographic areas (USDI 1995), ranging in size from 647 - 3,688 acres for individuals birds, and 945 - 3,846 acres for pairs (Ganey and Balda 1989b, Ganey *et al.* 1999). Little is known about habitat use of juveniles during natal dispersal. Ganey *et al.* (1998) found dispersing juveniles in a variety of habitats ranging from high-elevation forests to piñon-juniper woodlands and riparian areas surrounded by desert grasslands.

Mexican spotted owls consume a variety of prey throughout their range but commonly eat small and medium sized rodents such as woodrats (*Neotoma* spp.), peromyscid mice, and microtine voles. They may also consume bats, birds, reptiles, and arthropods (Ward and Block 1995). Habitat correlates of the owl's common prey emphasizes that each prey species uses a unique habitat. Deer mice (*Peromyscus maniculatus*) are ubiquitous in distribution in comparison to brush mice (*Peromyscus boylei*), which are restricted to drier, rockier substrates, with sparse tree cover. Mexican woodrats (*N. mexicana*) are typically found in areas with considerable shrub or understory tree cover and high log volumes or rocky outcrops. Mexican voles (*Microtus mexicanus*) are associated with high herbaceous cover, primarily grasses; whereas, long-tailed voles (*M. longicaudus*) are found in dense herbaceous cover, primarily forbs, with many shrubs, and limited tree cover. A diverse prey base is dependant on the availability and quality of diverse habitats.

The Mexican Spotted Owl Recovery Plan provides for three levels of habitat management: protected areas, restricted areas, and other forest and woodland types. "Protected habitat" includes all known owl sites, and all areas in mixed conifer or pine-oak forests with slopes greater than 40 percent where timber harvest has not occurred in the past 20 years, and all reserved lands. Protected Activity Centers (PACs) too are delineated around known Mexican spotted owl sites. A PAC includes a minimum of 600 acres designed to include the best nesting and roosting habitat in the area. The recommended size for a PAC includes, on average from available data, 75 percent of the foraging area of an owl. The management guidelines recommended in the recovery plan for protected areas are to take precedence for activities within those areas. "Restricted habitat" includes mixed conifer forest, pine-oak forest, and riparian areas; the recovery plan provides less specific management guidelines for these areas. The recovery plan provides no owl-specific guidelines for "other habitat."

Past, current, and future timber harvest practices in Region 3 of the Forest Service, in addition to catastrophic wildfire, were cited as primary factors leading to the listing of the owl as a federally-threatened species. Other factors that have or may lead to the decline of this species include a lack of adequate regulatory mechanisms. In addition, the Recovery Plan notes that forest management has created ecotones favored by great horned owls, increasing the likelihood of predation on the owl. Increases in scientific research, birding, educational field trips, and agency trips are also likely to increase. Finally, there is a potential for increasing malicious and accidental anthropogenic harm, and the potential for the barred owl to expand its range, resulting in competition and/or hybridization with the spotted owl.

ENVIRONMENTAL BASELINE

Under section 7(a)(2) of the Act, when considering the effects of the action on federally listed species, the Service is required to take into consideration the environmental baseline. Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects that have undergone section 7 consultation, and the impacts of State and private actions that are contemporaneous with the consultation in progress. On the Santa Fe National Forest, past and present Federal, State, private, and other human activities that affect this RU include the Maestas Timber Sale, urban interface projects, fuelwood gathering activities, development of recreation sites and scenic vistas, road construction and maintenance activities, land exchanges, and several private timber harvest projects throughout the area. In addition, past fires such as the Viveash, Dome and Cerro Grande fires have modified thousands of acres of habitat and impacted several owl PACs.

A total of 517 projects have undergone formal consultation for the owl in Arizona and New Mexico. Of that aggregate, 255 projects resulted in a total anticipated incidental take of 465 owls plus an additional unquantifiable number of owls. These consultations have primarily dealt with actions proposed by the Forest Service, Region 3, but have also addressed the impacts of actions proposed by the Bureau of Indian Affairs, Department of Defense (including Air Force, Army, and Navy), Department of Energy, National Park Service, and Federal Highway Administration. These proposals have included timber sales, road construction, fire/ecosystem management projects (including prescribed natural and management ignited fires), livestock grazing, recreation activities, utility corridors, military and sightseeing overflights, and other construction activities.

STATUS OF THE MEXICAN SPOTTED OWL (within the Action Area)

Southern Rocky Mountains - New Mexico RU

The project area on the Pecos/Las Vegas District of the Santa Fe National Forest within the Southern Rocky Mountains - New Mexico Recovery Unit (RU). This RU encompasses a large portion of northern New Mexico and contains a small portion (an estimated 4.5 percent) of the known owl sites throughout its range. However, Johnson and Johnson (1985) documented approximately 40 observations (historic sites) of owls throughout northern New Mexico. Current owl sites have been recorded in the Jemez and Sangre de Cristo Mountains, Bandelier National Monument and areas surrounding Los Alamos. Owl sites in these areas are generally described as having deep, narrow, timbered canyons with cool shady places for owls to roost. Many areas within northern New Mexico appear to contain owl nesting and roosting habitat but apparently are unoccupied. It is not clear if this is an artifact of survey efforts not being effective in finding owls or the birds are simply not present. Vegetation within this RU has been modified by past logging, extensive grazing, surface mining, fuelwood gathering, and fire suppression (Williams 1986, Van Hooser *et al.* 1992). Major fire events that have occurred in the past in the action area include the 1977 La Mesa Fire, 1996 Dome Fire, and 2000 Cerro Grande and Viveash Fires.

Little is known about owl habitat within this RU. Owl occurrences within this RU are disjunct and appear to coincide with patchy steep sloped or canyon type habitat. The majority of these records are considered historic (i.e., according to the Recovery Plan, owl sites detected prior to 1989). Johnson and Johnson (1985) documented several owl sites

throughout this RU. However, the apparently fragmented owl distribution may be a natural occurrence, the result of past management earlier this century as discussed above, or the result of inadequate survey efforts. While timber harvest has been dramatically reduced on the Santa Fe National Forest within the last 10 years and the management emphasis has changed to Forest health and smaller diameter logs, continued loss of habitat from catastrophic fire may be the greatest threat to recovery of the owl in this RU. Areas with low densities of owls tend to have a higher likelihood of extirpation due to stochastic or anthropogenic influences. Owl nesting and roosting habitat appears to exist in the form of disjunct patches in northern New Mexico. Although these patches of habitat may be relatively small, they may be crucial to habitat and population connectivity throughout the owl's range (see Keitt *et al.* 1994). Habitat disturbances may lead to further isolation of owl pairs and, eventually, these populations become "sink" populations. In all metapopulation models, dispersal is a key component. Dispersal acts as a bridge between subpopulations at the metapopulation scale to provide immigrants to otherwise isolated habitat patches. If the habitat patch has been unoccupied, then new recruitment is critical to recolonization of the area.

The project area is located 2 miles west of the town of Gascon, New Mexico. Forest Service lands adjacent to the private land (project area) were surveyed for owls, as part of the Maestas Timber Sale analysis, in 1990-1991. PACs have been established for owls that were detected at that time. Proposed hauling on FR 391E will not pass through any PACs and the proposed harvesting will not occur within known PACs.

According to the BA, the most recent surveys around the private land were done in 1991. The May 23, 2001, supplement to the BA states that, "without the benefit of recent MSO surveys, conducted to protocol standards, it is unknown if any of the habitat in proximity to the road is currently occupied. A standard assumption is habitat is occupied unless surveys indicate otherwise."

EFFECTS OF THE ACTION

The effects of timber harvest on the owl have been described in the Final Rule listing the owl as a threatened species (58 FR 14248-14271; March 16, 1993) as well as previous biological opinions provided by the Service to the Forest Service on August 23, 1993, and October 8, 1993. That information is included herein by reference.

Because this project involves a permitting action that is connected to activities to be conducted on private land, the Service must consider the indirect effects, as well as the effects of interdependent and interrelated actions to the owl from granting this permit. Indirect effects are those that are caused by, or result from, the proposed action, and are later in time, but are reasonably certain to occur. Interrelated actions are actions that are part of a larger action, and are dependent on the larger action for their justification. Interdependent actions are actions that have no independent utility apart from the action under consideration.

The interrelated and/or interdependent actions considered in this Biological Opinion are the timber harvest conducted on private land, road maintenance, and development of skid trails and loading areas. Since FR 391E is the only access to the private land, the timber harvest would not occur if it were not for the issuance of a Forest Service road use permit.

The Service believes that the maintenance and use of the existing road to haul timber could potentially affect individual owls. Effects from noise disturbance could result in adult and juvenile owls abandoning a roost site. The Service is concerned with the potential impacts to both owls and habitat as a result of the proposed timber harvest.

The proposed action of the Forest Service granting a road permit to allow timber harvest on private land is anticipated to result in impacts to approximately 160 acres of potential nest/roost habitat. It is unknown if this habitat meets threshold conditions as defined in the owl recovery plan, but this type of habitat is commonly used by owls on the Santa Fe National Forest. It has the density, multi-storied structure, and the large tree component. The April 11, 2001, BA states that surveys were conducted by a contract biologist within the private land. Although those surveys were not conducted according to Forest Service Region 3 protocol, the intensity of the survey efforts and the qualifications of the surveyors, leads the Service to conclude that the private land is currently unoccupied by owls. Since the only way to verify occupancy is through current surveys/monitoring and the documented surveys on Forest Service land along FR 391E are now more than 10 years old, the areas adjacent to the private land and FR 391E are considered occupied for the purpose of this analysis. It is possible that the habitat adjacent to the road has become occupied since the area was last surveyed. Noise disturbance during the breeding season could displace a nesting female, and thus cause mortality to eggs or chicks. The time frames discussed in the BA for project implementation are June 1, 2001 to January 2002. Because of the formal consultation time frames, a final biological opinion is likely to be issued by the end of June resulting in no road maintenance or harvest activities taking place before June 27, 2001. Activities that could cause noise disturbance to breeding owls would not occur during the early and critical part of the breeding season (i.e., establishment of pair occupancy, courtship, and nesting/breeding behavior. Any disturbance from road maintenance or logging trucks on the road would occur toward the end of the breeding season when it is likely that young owls have already fledged. Disturbances during the second part of the breeding season are generally not considered to pose the same magnitude of impacts to breeding behavior and young survival as disturbances that occur early in the breeding season (before young are fledged).

The most significant indirect effects are expected to result from reduced stand density and structure caused by timber harvesting. Impacts to habitat will be in the form of altering owl nesting, roosting and foraging habitat. The proposed harvest will impact a small amount of suitable habitat on private land within the RU. Impacts would reduce the quality and quantity of nest/roost habitat within restricted habitat and modify unoccupied owl habitat. The prescribed harvest treatment, would reduce canopy closure and tree density, simplify stand structure and reduce the quality and quantity of nest/roost habitat in unoccupied suitable habitat, adjacent to potentially occupied suitable habitat on Forest Service land. After harvest, it is unlikely that the habitat in the affected area will provide for nesting and roosting, but the residual stand could provide foraging and dispersal habitat. The Service believes that although there will be adverse effects to habitat at a local level within the Southern Rocky Mountain - New Mexico RU, these impacts will not disrupt the function of this RU. Sufficient owl habitat will remain for owls to nest, roost, forage and disperse.

CUMULATIVE EFFECTS

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities on endangered or threatened species or critical habitat that are reasonably certain to occur in the foreseeable future. Future Federal actions are subject to the

consultation requirements established in section 7, and, therefore, are not considered cumulative in the proposed action. In past Biological Opinions, it has been stated that, "Because of the predominant occurrence of the owls on Federal lands, and because of the role of the respective Federal agencies in administering the habitat of the owl, actions to be implemented in the future by non-Federal entities on non-Federal lands are considered of minor impact." However, there has been a recent increase of harvest activities on non-Federal lands (e.g., private land timber sales on inholdings in and around the Santa Fe NF). In addition, future actions adjacent to Forest Service lands that are reasonably expected to occur include urban development, road building, land clearing, logging, fuelwood gathering, and other associated actions. These activities reduce the quality and quantity of owl nesting, roosting and foraging habitat, cause disturbance to breeding owls and would contribute as cumulative effects to the proposed action.

CONCLUSION

After reviewing the current status of the owl, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the issuance of the Forest Road 391E Special Use Permit is not likely to jeopardize the continued existence of the owl. While the project will adversely affect unoccupied nest/roost habitat occurring on private land, the proposed action will not impede the owl's ability to nest, roost, forage or disperse within the Southern Rocky Mountain - New Mexico RU.

INCIDENTAL TAKE

Section 9 of the Act, as amended, prohibits taking (harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harass is further defined as an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent to significantly disrupt normal behavior patterns. Normal behavior patterns include, but are not limited to, breeding, feeding, and sheltering. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the incidental take statement.

For the purposes of consideration of incidental take of owls by the proposed project now under consultation, incidental take can be broadly defined as either the direct mortality of individual birds, or the alteration of habitat that affects the behavior (i.e., breeding or foraging) of the birds to such a degree that the birds are considered lost as viable members of the population and are thus "taken". They may fail to breed, fail to successfully rear young due to inadequate food supplies in altered habitat, raise fewer young, raise less fit young, or desert the area because of disturbance when habitat no longer meets the owls needs.

In past Biological Opinions, the management territory was used to quantify incidental take thresholds (see Biological Opinions provided by the Service to the Forest Service from August 23, 1993, to date). The current section 7 consultation policy states that incidental take can only be supported if an activity compromises the integrity of a PAC. Action outside

PACs will not be considered incidental take, except in cases when areas that may support owls have not been adequately surveyed. Surveys that are more than 2 years old are considered to be inadequate because the existing nest/roost habitat could have become occupied since the area was last surveyed.

It is the opinion of the Service that the proposed action will not lead to incidental take of owls. This determination is based on the fact that surveys conducted by a private contractor on the private land indicate absence of owls. Although survey data along FR 391E is outdated and occupancy of the area must be assumed, implementation of the project would occur outside the critical period of the breeding season (i.e., courtship, nesting, brooding). It is unlikely that disturbance during the later part of the breeding season (after June 27) would result in take of individuals. Using available information as presented within this document, the Service recognizes that impacts of the proposed harvest would result in the loss of potential nest/roost habitat for the owl on the private land. However, as stated previously, there are many areas within this RU that contain unoccupied owl nesting and roosting habitat. Some of these areas occur on the Santa Fe NF which is currently being managed according to the guidelines set forth in the Mexican Spotted Owl Recovery Plan. Based on these reasons, there are no reasonable or prudent measures provided. If during the course of this action, incidental take occurs, such incidental take would represent new information requiring review of the project effects and the Forest Service must reinitiate consultation with the Service immediately to avoid violation of section 9, and/or the landowner must obtain a section 10(a)(1)(B) permit.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for this species.

1. Work with private landowners and communities adjacent to and within the Santa Fe National Forest to emphasize the benefits of ecological diversity and the contribution that the Mexican spotted owl provides to that diversity and forest health.
2. Initiate prey population monitoring studies within PACs that can be correlated with nesting success, livestock grazing management, and climatic conditions.

In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the Forest Road 391 E Special Use Permit as described in the BA and supplement to the BA. As required by 50 CFR 402.16, re-initiation of formal consultation is required if: (1) the amount or extent of incidental take is exceeded;

(2) new information reveals effects of the agency action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action.

In future communications regarding this project, please refer to consultation #2-22-01-F-429. If you have any questions or would like to discuss any part of this biological opinion, please contact Delfinia Montañó of my staff at (505) 346-2525 ext. 117.

Sincerely,

A handwritten signature in cursive script that reads "Joy E. Nicholopoulos".

Joy E. Nicholopoulos
Field Supervisor

LITERATURE CITED

- Barrowclough, G.F., and R.J. Guitierrez. 1990. Genetic variation and differentiation in the spotted owl (*Strix occidentalis*). *Auk* 107:737-744.
- Barrowclough, G.F., R.J. Guitierrez, and J.G. Groth. 1999. Phylogeography of spotted owl (*Strix occidentalis*) populations based on mitochondrial DNA sequences: gene flow, genetic structure, and a novel biogeographic pattern. *Evolution* 53:919-931.
- Fletcher, K. 1990. Habitats used, abundance, and distribution of the Mexican spotted owl, *Strix occidentalis lucida*, on National Forest system lands. U.S. Forest Service, Southwestern Region, Albuquerque, New Mexico. 86pp.
- Fletcher, K., and H. Hollis. 1994. Habitats used, abundance, and distribution of the Mexican spotted owl (*Strix occidentalis lucida*) on National Forest System Lands in the Southwestern Region. USDA, Forest Service, Southwestern Region, Albuquerque, New Mexico. 86pp.
- Forsman, E.D., E.C. Meslow, and H.M. Wight. 1984. Distribution and biology of the spotted owl in Oregon. *Wildlife Monographs* 87:1-64.
- Ganey, J.L. 1988. Distribution and habitat ecology of Mexican spotted owls in Arizona. MS Thesis. Northern Arizona University, Flagstaff, Arizona.
- Ganey, J.L. and R.P. Balda. 1989a. Distribution and habitat use of Mexican spotted owls in Arizona. *Condor* 91:355-361.
- Ganey, J.L. and R.P. Balda. 1989b. Home-range characteristics of spotted owls in northern Arizona. *Journal of Wildlife Management* 53:1159-1165.
- Ganey, J.L., W.M. Block, J.K. Dwyer, B.E. Strohmeier, and J.S. Jenness. 1998. Dispersal, movements, and survival rates of juvenile Mexican spotted owls in Northern Arizona. *Wilson Bull.*, 110(2):206-217.
- Ganey, J.L., W.M. Block, J.S. Jenness, and R.A. Wilson. 1999. Mexican spotted owl home range and habitat use in pine-oak forest: implications for forest management. *Forest Science* 45:127-135.
- Johnson, J.A. and T.H. Johnson. 1985. The status of the spotted owl in northern New Mexico. Unpubl. rep. New Mexico Dept. Game and Fish, Santa Fe. 39pp.
- Keitt, T. H. 1994. Habitat affinity and metapopulation structure of the Mexican spotted owl. Unpubl. final report (Coop. No. 1448-00002-94-0810), U.S. Fish and Wildlife Service, Albuquerque, New Mexico. 45pp.
- McDonald, C.B., J. Anderson, J.C. Lewis, R. Mesta, A. Ratzlaff, T.J. Tibbitts, and S.O. Williams. 1991. Mexican spotted owl (*Strix occidentalis lucida*) status report. U.S. Fish and Wildlife Service, Albuquerque, New Mexico. 85 pp.

- New Mexico Department of Game and Fish. 1988. Handbook of Species Endangered in New Mexico, F-201:1-2.
- Seamans, M.E. and R.J. Gutiérrez. 1995. Breeding habitat of the Mexican spotted owl in the Tularosa Mountains, New Mexico. *Condor* 97:944-952.
- Seamans, M.E., R.J. Gutiérrez, C.A. May, and M.Z. Peery. 1999. Demography of two Mexican spotted owl populations. *Conservation Biology* 13:744-754.
- USDI Fish and Wildlife Service. 1991. Mexican spotted owl status review. Endangered species report 20. Albuquerque, New Mexico.
- USDI Fish and Wildlife Service. 1993. Endangered and Threatened Wildlife and Plants; final rule to list the Mexican spotted owl as threatened. *Federal Register* 58:14248-14271.
- USDI Fish and Wildlife Service. 1995. Recovery plan for the Mexican spotted owl (*Strix occidentalis lucida*). Albuquerque, New Mexico. 85pp.
- USDI Fish and Wildlife Service. 1995. Endangered and threatened wildlife and plants; determination of critical habitat for the Mexican spotted Owl; Final rule; 60:29914-29951.
- USDI Fish and Wildlife Service. 1998. Endangered and Threatened Wildlife and Plants; revocation of critical habitat for the Mexican spotted owl, loach minnow, and spikedace. *Federal Register* 63:14378-14379.
- USDI Fish and Wildlife Service. 2000. Endangered and threatened wildlife and plants; proposed designation of critical habitat for the Mexican spotted Owl; Proposed rule; 65:45336-45353.
- Ward, J.P. Jr., and W.M. Block. 1995. Mexican spotted owl prey ecology. *In* Mexican Spotted Owl Recovery Plan. U.S. Department of the Interior, Fish and Wildlife Service, Albuquerque, New Mexico.
- White, G.C., A.B. Franklin, and J.P. Ward, Jr. 1995. Population biology. *In* Mexican Spotted Owl Recovery Plan. U.S. Department of the Interior, Fish and Wildlife Service, Albuquerque, New Mexico.
- Willey, D.W. 1993. Home range characteristics and juvenile dispersal ecology of Mexican spotted owls in southern Utah. Unpubl. Rep. Utah Div. Wildl. Resour., Salt Lake City.
- Williams, J.L. 1986. New Mexico in maps. Univ. New Mexico Press, Albuquerque. 409pp.
- Van Hooser, D.D., D.C. Collins, and R.A. O'Brien. 1992. Forest resources of New Mexico. USDA For. Serv. Inter. Res. Stn. Ogden, Utah. 80pp.

Young, K.E., R. Valdez, P.J. Zwank, and W.R. Gould. 1998. Density and roost site characteristics of spotted owls in Sierra Madre Occidental, Chihuahua, Mexico. *Condor* 100:732-736.